IN THE SPECIFICATION:

Please replace paragraph [0011] in the specification with the following:

[0011] Figure 2A is a perspective view of a conductor 16 for receiving Hall effect devices 12. Conductor 16 is unitary and fabricated using a conductive material. In an alternative embodiment, conductor 14 is non-unitary. Conductor 16 includes a first side 18, a second side 20, a first edge 22, a second edge 24, a third edge 26, a fourth edge 28, and a thickness 30. Conductor 16 also includes a slot 32 extending from first side 18 to second side 20. Slot 32 is located at the approximate geometric center of conductor 16. Slot 32 is designed such that a current introduced at first edge 22 is divided into two approximately equal current components 34 and 36. Current sensor 10 is inserted at least partially into slot 32 and facilitates detecting a magnetic field created by current carrying conductor 16. The current components 34 and 36 then generate two magnetic field components 38 and 40 that are shaped such that they are substantially in the opposite direction and substantially equal in magnitude. As used herein, the term "component," with respect to a magnetic field, refers to a line of force of the magnetic field, wherein, as is known, a line of force is formed from a plurality of generally aligned magnetic field vectors. As such, magnetic field components are illustrated in the Figures using arrows. Furthermore, as used herein, the term "shape," with respect to a magnetic field, refers to the pattern formed by a the lines of force of the magnetic field, wherein the lines of force are oriented within a three-dimensional space.

Please add the following paragraphs immediately before paragraph [0012].

Further, as is known, an ambient or external magnetic field B_A, such as the Earth's magnetic field, is detectable by Hall effect devices 12. The ambient magnetic field B_A has a first component 50 detected by a first Hall effect device 12 and a second component 52 detected by the other Hall effect device 12. Because magnetic field B_A is external to current sensor 10, the first and second components 50 and 52 each have the same direction through Hall effect devices 12. Hall effect devices 12 generate an output based on the ambient magnetic field B_A. However, as described in more detail below, a differential signal processing circuit 34 process the output of Hall effect devices 12 such the output generated based on the ambient magnetic field B_A is reduced. By reducing the output generated based

on the ambient magnetic field B_A, the total output of current sensor 10 and/or Hall effect devices 12 is substantially uninfluenced by the ambient magnetic field B_A.

Please replace paragraph [0013] in the specification with the following:

[0013] Referring again to Figure 1, the components of the magnetic field *B* perpendicular to substrate 14 on which two Hall effect devices 12 have been disposed are shown. In one embodiment, the magnetic field includes at least a first magnetic field component having a first direction and a second magnetic field component having a second direction different from the first direction. Hall effect devices 12 are placed a pre-determined distance from each other such a first Hall effect device 12 can detect least a first magnetic field component having a first direction and ~~another~~ second Hall effect device 12 can detect a second magnetic field component having a second direction different from the first direction. As such, the first Hall effect device 12 generates a first output having a positive value, and the second Hall effect device 12 generates a second output having a negative value. Alternatively, the first output is negative and the second output is positive. In the exemplary embodiment, the absolute values of the first and second outputs are approximately equal such that the output values are generally equal but opposite. The magnetic field *B* components are created in such a way that they substantially change direction over a relatively short distance. In one embodiment, Hall effect devices 12 outputs are processed using a differential signal processing circuit 34, such as, but not limited to, a difference calculator. Differential signal processing circuit 34 output is then processed by an analog and digital signal processing circuit 36 for further processing and calculations.

Please add the following paragraphs immediately following paragraph [0013].

In the exemplary embodiment, differential signal processing circuit 34 is a difference calculator. As such, processing circuit 34 subtracts the output from the second Hall effect device 12 from the output of the first Hall effect device 12. In effect, the processing circuit 34 adds the first and second outputs generated by field B because the outputs have opposing signs. More specifically, processing circuit 34 combines the first and second outputs of the generated magnetic field B according to Output (B) = first output – (- second output) = first output + second output. When the first and second outputs are equal but opposite, the output based on field B of the Hall effect devices 12 is doubled. Furthermore, because differential signal processing circuit 34 is a difference calculator and the ambient magnetic field

components 50 and 52 are in the same direction through Hall effect devices, the outputs of ambient magnetic field components 50 and 52 are subtracted according to Output (B_A) = - first component output – (-second component output) = second component output – first component output. Because the ambient magnetic field components 50 and 52 each have the same sign, the output generated based on the ambient magnetic field B_A is reduced. In the exemplary embodiment, the total output of Hall effect devices 12 is Output (total) = Output (B) + Output (B_A) = first output of B + second output of B + (second output of B_A – first output of B_A). As such, when the first and second outputs generated from field B are equal but opposite, the total output of the Hall effect devices 12 is Output (total) = 2 x output of B + (second output of B_A – first output of B_A). Accordingly, current sensor 10 and/or Hall effect devices 12 are generally insensitive to or generally unaffected by the ambient magnetic field B_A because the processor circuit 34 adds the outputs generated by field B and subtracts the outputs generated by field B_A.